

Application No.: 10/697768Case No.: 58585US002**REMARKS**

Claims 1-42 are pending.

**Specification**

The specification is amended herein as suggested by the Examiner. No change in scope or substance is made by these amendments and no new matter is added.

**Claim Objections**

Claim 13 is amended herein as suggested by the Examiner. No change in scope or substance is made by this amendment and no new matter is added.

**§ 102 and § 103 Rejections**

Claims 1-33 stand rejected under 35 USC § 102(b) as purportedly anticipated by U.S. Pat. No. 3,282,875 (Connolly). Claims 34-42 stand rejected under 35 USC § 103(a) as purportedly unpatentable over Connolly in view of U.S. Pat. No. 6,274,677 (Tatemoto).

To anticipate a claim, a reference must teach every element of the claim. MPEP § 2131. In order to establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP § 2143.03. Each of the present rejections depends on Connolly for a purported disclosure of the reaction steps recited in the rejected claims. However, Connolly fails to teach certain elements and limitations of those reaction steps.

The present claims recite a method of aqueous emulsion polymerization of a sulfonyl halide monomer which can be accomplished *without* added emulsifier, contrary to expectations. The present claims recite a two-step method of aqueous emulsion polymerization, which includes the formation of a pre-emulsion. This step of forming a pre-emulsion includes the *partial* conversion of sulfonyl halide groups to sulfonate groups, by addition of 0.001-0.9 molar equivalents of base. Thus the polymer resulting from this polymerization contains unhydrolyzed sulfonyl halide-functional monomer units.

The Office action cites no teaching or suggestion in Connolly of the *partial* conversion of sulfonyl halide groups to sulfonate groups prior to reaction. However, in the method according to

Application No.: 10/697768Case No.: 58585US002

the present invention, this limitation allows the production of a polymer that contains unhydrolyzed sulfonyl halide-functional monomer units. The present specification teaches that, “[i]n general, copolymers which contain predominantly SO<sub>2</sub>F groups rather than SO<sub>3</sub><sup>-</sup> groups are more easily melt processed, e.g. by extrusion or hot pressing into various shapes, e.g. into films or membranes.” (Specification at page 10, lines 15-17). Since the Connolly reference fails to teach or suggest limitations of the rejected claims, these rejections must be withdrawn.

For the foregoing reasons, the rejection of claims 1-33 under 35 USC § 102(b) and the rejection of claims 34-42 under 35 USC § 103(a) have been overcome and should be withdrawn.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

Respectfully submitted,

By:

  
Philip Y. Dahl, Reg. No.: 36,115  
Telephone No.: (651) 737-4029

May 10, 2005

Date

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
Facsimile No.: 651-736-3833